

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Upon entry of the presented amendments, claims 1 and 5-73 will be pending. Claims 1 and 5-73 are currently amended. Claims 74-76 are new. Support for the amendments may be found throughout the specification as originally filed. Support for the amendments to claims 1, 23, 60, and 66 may be found throughout the specification, including but not limited to, paragraphs 39, 45, and the paragraph after paragraph 45 as provided above, and claims 1, 3, and 4 as originally filed.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. No new matter has been added by way of amendment as the amendments are fully supported by the specification and claims as originally filed.

With separate regard to Claim 1, Applicants point out that in Applicants' previous response, Claim 1 was amended to change 60,000 to 18,000. However, 18,000 was not underlined as being included by amendment, while 60,000 was shown in brackets as being deleted. In this response, Applicants have presented, in part, 18,000 as being underlined, to ensure entry by the Examiner.

Applicants also point out that the amendments to claims 5-22, 24, 26-59, 61-65, and 67-73 are made solely at the request of the Examiner to prevent confusion based upon the Office Action of October 3, 2006. In that Office Action, the claims were objected to for failing to include a period at the end of each sentence, and in some of the recited numerical values. Applicants' representative discussed with the Examiner that the periods were included with the Applicants' prior response, but due to a poor transmission of the facsimile to the patent office, were apparently too weak to be easily observed. In lieu of a resubmission of the previous response, the Examiner requested that claims 5-22, 24, 26-59, 61-65, and 67-73 be marked as

Currently Amended, with the end of sentence periods added to avoid confusion. There is no new matter added with the proffered amendments.

**I. Examiner Interview Summary.**

Applicants' representative thanks Examiner Mullis for extending the courtesy of an interview and discussion of the application on February 12, 2007. The poor facsimile transmission of Applicants' previous response was discussed. The Examiner suggested that the above-stated course of action be followed, in regard to the missing periods at the ends of sentences and in some numerical values in claims 10, 15, 21, 28, 45, 60, 66, 67, and 71. The amendment of claim 25 to recite "polymerized" was discussed. Agreement to the amendment of every claim to address the poor facsimile transmission and the amendment to claim 25 was reached.

Potential additional amendments to several independent claims was also discussed, as well as several independent claims being distinguishable from the cited art on other grounds. The additional amendments were in reference to the phrase:

wherein the number average number of functional groups is calculated based upon functional groups selected from the group consisting of epoxy functional groups, anhydride functional groups, and carboxylic acid functional groups

as recited in claims 1, 23, 60, and 66. The Examiner indicated he would consider the additional proposed amendments.

Applicants' representative thanks Examiner Mullis for the telephone message on February 19, 2007 indicating that the additional proposed amendments would overcome the Emmons reference.

## **II. Claim Objections.**

As noted above, Applicants believe that the electronic filing of the previous response with the USPTO failed to capture periods denoting the end of sentences in the claims and in some numerical values. Applicants' copy of the previous response clearly shows periods at the end of each claim.

The Examiner also objected to the specification amendment filed July 20, 2006 for introducing new matter. Again, Applicants believe that a poorly transmitted copy of the response is the source of the confusion resulting in the objection. The Examiner notes that values of PDI's of "28, 32, and 45" are not supported by the application as filed. Applicants' copy of the response shows that the specification amendments are actually recited in the amendment to be 2.8, 3.2, and 4.5, each of which has ample support in US 6,984,694, incorporated by reference. Applicants have again amended the specification to clearly show the proper values, by replacing paragraph 45 and the following paragraph as proffered with the previous response, with the paragraphs provided on page 3 of this communication.

As noted above, and at the request of the Examiner, amendments to every claim show a period at the end of the sentence, and in some numerical values (in claims 10, 15, 21, 28, 45, 60, 66, 67, and 71), are solely provided to avoid any confusion. Also, a replacement paragraph 45 and a paragraph to follow paragraph 45, are provided. Applicants request that the Examiner enter the amendments and remove the noted objections to claims 1 and 5-73.

## **III. Claim Rejections Under 35 U.S.C. § 112.**

Claims 10, 15, 21, 28, 45, 60, 66, 67, and 71 stand rejected under 35 U.S.C. § 112 first paragraph, for failing to comply with written description requirements. The Examiner specifically points to the claimed molar ratios as failing to have support in the specification. Applicants submit that the remarks in Section II, above, and the amendments to claims 10, 15, 21, 28, 45, 60, 66, 67, and 71 address this issue. Thus, in view of the amendments to the

numerical values in the cited claims, Applicants solicit the Examiner's withdrawal of the rejection.

The independent claims stand rejected under 35 U.S.C. § 112 first paragraph, for being unclear. Specifically, the Examiner is unclear if a homopolymer (oligomer) is encompassed by the claim. As explained by Applicants during the interview with the Examiner on 2/12/07, because the number average number of functional groups ( $F_N$ ) for an ester functional group is zero, if a homopolymer were prepared, the limitation on  $F_N$  would not be satisfied. Therefore, it is clear to one of skill in the art that a homopolymer of an acrylate is not encompassed by the claims as currently recited.

Claim 25 stands rejected under 35 U.S.C. § 112, second paragraph as failing to have antecedent basis for "anionically polymerizable polymer." In view of the amendment to Claim 25, Applicants believe that the grounds for this rejection are now moot.

In view of the above noted amendments and remarks, Applicants respectfully request that the Examiner reconsider and remove the rejections under 35 U.S.C. § 112.

#### **IV. Claim Rejections Under 35 U.S.C. § 102.**

Claims 1, 5-8, 12-19, 21-23, 25, 26, 28-38, 45-53, 56-63, and 73 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,120,839 issued to Emmons *et al.* Applicants respectfully traverse this rejection.

As explained in the interview, in light of the amendments to independent claims 1, 23, 60, and 66, Emmons fails to teach each and every element of those claims as currently presented, and any claim that depends therefrom. As amended, each of claims 1, 23, 60, and 66 recites, in part:

...the oligomer having...a number average number of functional groups from about 4 to about 12...wherein the number average number of functional groups is calculated based upon functional

groups selected from the group consisting of epoxy functional groups, anhydride functional groups, and carboxylic acid functional groups.

Thus, the number average number of functional groups must be within the specified range and the functional groups which are used to calculate the number average number of functional groups is limited to those specified. Applicants submit that Emmons appears to only describe polymers with amine or ester functionality, neither of which are used to determine the number average number of functional groups recited in the claim. Because Emmons cannot teach an oligomer having the stated number average number of functional groups, Emmons cannot be found to anticipate the claim.

Also, as explained in the interview, Emmons fails to teach each and every element of independent claims 61, 64, and 69, as currently presented. Emmons is directed to aminolyzed oligomers having polyamine functionality (title, abstract, and col. 1, liens 10-19). The oligomers are used in paints and coatings, as described throughout the examples (see e.g. col. 14, line 34 and col. 20, line 35). There is no teaching or suggestion of the modification of materials, other than paints and/or coatings, with the aminolysis products of Emmons.

Currently presented claim 61 is directed to “a reinforced material comprising a compound that is one of asphalt, plastics and rubbers and the reaction product of a free radically polymerized oligomer...and an anionically polymerized polymer...” There simply is no teaching or suggestion in Emmons of preparing reinforced materials such as asphalt, plastics, and rubbers with the compounds of that invention. Likewise, claims 64 and 69 are directed to a modified asphalt, and a modified plastic, respectively, in which the free radically polymerized oligomer and anionically polymerized polymer are incorporated. There is no suggestion in Emmons of such a utility for the aminolyzed oligomers of that invention. Without such a teaching or suggestion, Emmons cannot be found to anticipate the presently claimed invention.

Because Emmons fails to teach each and every element of the claims as currently presented, Emmons cannot be found to anticipate the claims 61, 64, and 69, and Applicants respectfully request removal of the rejections under 35 U.S.C. § 102.

**V. Rejoinder**

In the Office Action of 1/20/2006, claim 37 was indicated as withdrawn as a non-elected species. 37 C.F.R. § 1.141 provides for rejoinder of non-elected species in an application where a generic claim is found allowable. Applicants submit that claim 1, to which claim 37 is generic, is now allowable. As such, Applicants respectfully request that the Examiner rejoin claim 37 pursuant to Rule 141.

**CONCLUSION**

Applicants believe that the present application is now in condition for allowance, and request that the Examiner remove all rejections, allowing the application to move forward to issuance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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